

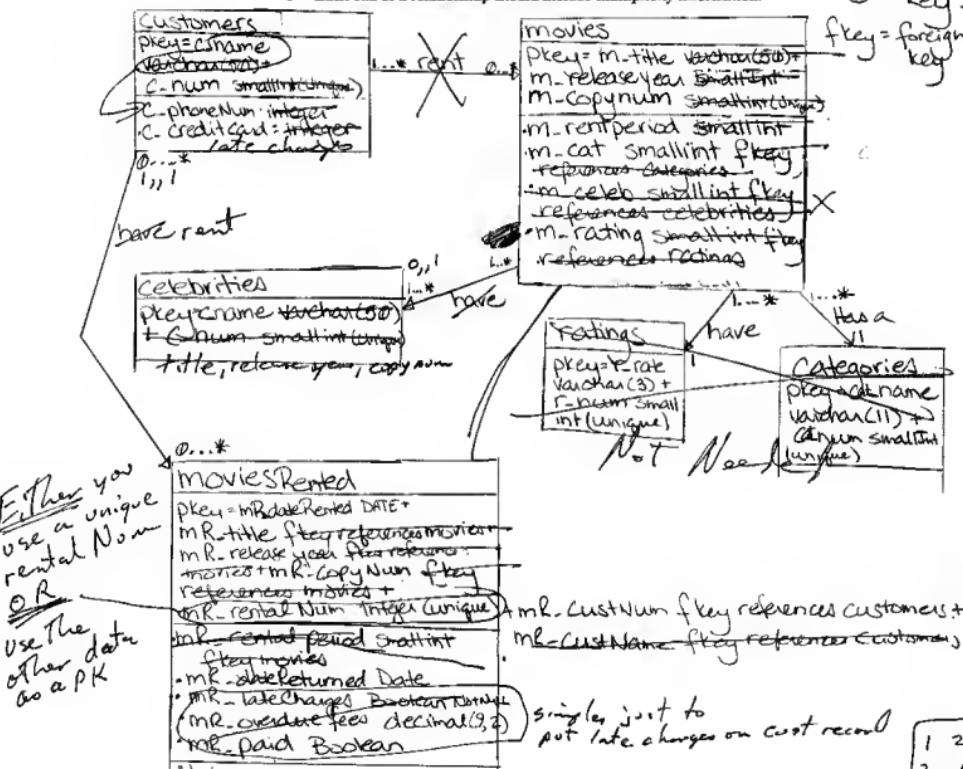
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1. Entity Relationship diagram (worth 40 marks)

Carefully consider the requirements identified in the case study and translate them into a detailed entity-relationship diagram of a database that meets these requirements. You may also want to consider the requirements of parts 2 and 3 of this exam. Do not include any unnecessary entities or attributes. Your diagram should include:

- The entities that need to be represented by tables in the database
 - Each entity should be represented by a box that has three sections that contain:
 - A suitable name for the entity
 - The attributes that will be used as the primary key of the entity
 - The other attributes that need to be included in the entity
 - (I know that I said that so much information in a diagram can be hard to read, but it's easier for you to answer the question this way)
- The relationships that need to be represented in the database
 - Each relationship should be named meaningful
 - Each end of a relationship should include multiplicity information.

pkey = primary key
fkey = foreign key



You have cluttered this diagram with much data that is not required in the question

(4)

2. SQL data definition (worth 14 marks)

You are to provide a set of SQL data definitions (as required in the subsections of this question) relating to the main assignment table only. Do not create any unnecessary definitions or parts of definitions.

- It is expected that you can determine which table I mean from the case study and your e-r diagram. The main assignment table is the first table into which some information about a new assignment is entered.
- Be sure to use suitable naming of all components as discussed in class.

- a. Provide the SQL required to define the domains you will use in your definition of the main movie table.

- CREATE DOMAIN num AS SmallInt;
- CREATE DOMAIN uniqueNum AS SmallInt UNIQUE; X
OR
- CREATE DOMAIN uniqueNum AS serial; no postscript;
- ✓ • CREATE DOMAIN title AS varchar(50);

this would assign a unique # to every movie in the store →

This needs to be constrained to 1-14 by a domain

- b. Provide the SQL required to define the main movie table. I used the domains I created above

CREATE TABLE movies (inTitle title, inReleaseYear num,
 (m-copyNum uniqueNum), in-rentPeriod num, in-cat num,
 m-celeb num, m-rating num, PRIMARY KEY (in-title, in-releaseYear,
 m-copyNum), Foreign Key (in-cat) references categories(c-num),
 FOREIGN KEY (m-celeb) references celebrities(c-num),
 FOREIGN KEY (m-rating) References ratings(r-num));

if you do this then

you don't need
 m-title, m-releaseYear
 in the key

Since they would be redundant

These should
 be specified
 values

3. SQL Data Manipulation (worth 16 marks)

In question 2 you did not define all of the data definitions you need to answer the following questions. You should use those definitions you have that apply from question 2. However, by using good attribute and view names that relate to the names you used in question 1, it should be obvious what you mean.

- c. Provide the SQL required to get information from the main movie table about all movies where "Jackie Chan" is known to be an actor. The information should be sorted based on year of release. need specific fields

~~x~~ SELECT * FROM movies WHERE
~~x (m-celeb = (Select cnum FROM celebrities
 need to allow multiple celebrities per movie
 WHERE (c-name = Jackie Chan))).)~~
 ORDER BY m-releaseyear;

~~* I'm assuming that you don't want the
 release year displayed even though we are
 using it to order the movies.~~

- d. Provide the SQL for a subquery that can be used within other queries to find if any copies of a given movie (identified in the main query) are available to be rented right now.

~~SELECT * FROM movies WHERE (m-title = "Desired movie")
 AND (SELECT m-copynum from movies where (m-title=\$m)
 NOT IN (SELECT mCopyNum FROM movies RENTED
 where (mr-dateReturned >= @today's date))).~~

~~This would not work because you would not ever
 have a value in dateReturned for movies not yet returned.
 Thus date Returned is never > today's date~~

~~Putting today's date in quotes makes it a literal
 which cannot be compared with a date which is numeric~~